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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/138,429	08/24/98	HASHIM	I AMAT/2406/MD

IM52/0712

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EXAMINER

MERCADO, J

ART UNIT

PAPER NUMBER

1745

13

DATE MAILED: 07/12/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Advisory Action

Application No.
09/138,429

Applicant(s)
Hashlm et al.

Examiner
Julian A Mercado

Art Unit
1745



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

THE REPLY FILED Jun 18, 2001 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid the abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

THE PERIOD FOR REPLY [check only a) or b)]

- a) ☒ The period for reply expires three months from the mailing date of the final rejection.
- b) ☐ In view of the early submission of the proposed reply (within two months as set forth in MPEP § 706.07 (f)), the period for reply expires on the mailing date of this Advisory Action, OR continues to run from the mailing date of the final rejection, whichever is later. In no event, however, will the statutory period for the reply expire later than SIX MONTHS from the mailing date of the final rejection.

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will be entered upon the timely submission of a Notice of Appeal and Appeal Brief with requisite fees.
3. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search. (See NOTE below);
- (b) ☐ they raise the issue of new matter. (See NOTE below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without cancelling a corresponding number of finally rejected claims.

NOTE: _____

4. ☐ Applicant's reply has overcome the following rejection(s): _____
5. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in separate, timely filed amendment cancelling the non-allowable claim(s).
6. ☐ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____
7. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
8. ☒ For purposes of Appeal, the status of the claim(s) is as follows (see attached written explanation, if any):
- Claim(s) allowed: _____
- Claim(s) objected to: _____
- Claim(s) rejected: 1-3, 5, 6, 15, 16, and 18-20
9. ☐ The proposed drawing correction filed on _____ a) ☐ has b) ☐ has not been approved by the Examiner.
10. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
11. ☒ Other: *Applicant's arguments have been fully considered, however, the prior art of record is still considered to teach or at least suggest the instant invention. (See attached)*

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Remarks

1. This Advisory Action is responsive to Applicant's amendment filed June 18, 2001.

The proposed amendment will be entered upon timely filing of a Notice of Appeal and an Appeal Brief.

Applicant's arguments have been fully considered, however they are not persuasive.

Applicant submits that a rotating pair of magnets would not generate a magnetic field parallel to the surface. However, the examiner respectfully disagrees. A rotating magnetic field would in fact result in spatial-averaging, thereby resulting in a more uniform, parallel magnetic field. Applicant is reminded that Tepman discloses a rotating pair of magnets as an alternative embodiment. The preferred embodiment as illustrated in Figure 2 and as disclosed in column 5 line 23 *et seq* is considered to show a non-rotating pair of magnets, in that the magnets are "coupled to the base of the acceptor". Figure 2 appears to be consistent with this disclosure.

Arguments that Tepman's magnetron is not annular is not persuasive. As discussed in the previous Office Action, it is believed that the magnetrons as illustrated are shown as a sectional view. The magnetrons are believed to be in the form of hemispherical loops coming out of the plane of the page, and thereby forming a closed circular ring. Of note, Applicant has not addressed this line of reasoning by the examiner.

Applicant submits that Tepman does not teach the annular magnet array to be "about the surface" of the substrate support. By the limitation "about", Applicant argues that Tepman's magnet is not disposed "along the perimeter" of the substrate support. Applicant's interpretation

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of the term “about” appears to be narrowly construed, however, while this argument may have merit, the limitation “about the surface” was given its broadest reasonable interpretation, in that the magnet array or magnetrons in Tepman are equidistant from the edges of the wafer, thereby allowing the magnetic field lines to converge above the wafer surface. Applicant is encouraged to recite the exact positioning of the annular magnet array, e.g. disposed along the perimeter of the substrate support, for this feature of the claimed invention to be given patentable weight.

As to arguments against Ghanbari, Applicant is reminded that Tepman alone is considered to teach or at least suggest concentrically positioning the magnet array about the surface of the substrate. In addition to Tepman’s stand-alone teaching, Ghanbari was relied upon solely to show that concentric positioning of the magnets is well-known to the skilled artisan and would be motivated for reasons such as enhancement of the ion flux or sputtered crystal orientation. As to a perpendicular magnetic field, it is noted that in addition to a vertical, i.e. perpendicular component, a magnetic field would naturally have a horizontal or parallel component to the wafer. Further, Ghanbari appears to show a parallel magnetic field in that the field lines are equally distant from the surface of the wafer.

Arguments against Hsu, Boys and Alex appear to be directed to these reference not overcoming the deficiencies of the Tepman and Ghanbari references. However, in view of the foregoing discussion, Tepman and Ghanbari are considered to teach or at least suggest to one of ordinary skill in the art the instant invention.

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Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette, can be reached at (703) 308-0756. The official fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599. The unofficial fax number is (703) 306-3429.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

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 Jam/July 9, 2001


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700